Patent Claims

1. Controller for a surgical laser, which is adapted to control a laser that can be connected to the controller, in order to produce a cut surface inside an eye lens using a multiplicity of laser pulses.

2. Controller according to Claim 1, wherein the controller is designed in such a way that the pulse energy of the laser pulse is limited to a range from 1 pJ to 1 µJ.

3. Controller according to one of the preceding Claims, wherein the controller is designed so that the size of the bubbles produced in the eye lens by the laser pulse is limited to a diameter of at most 50 µm.

4. Controller according to one of the preceding Claims, wherein the controller is designed so that the thickness of the cut surface is limited to at most 5 µm.

5. Controller according to one of the preceding Claims, wherein the controller is designed in such a way that the cut area is produced by at least 10,000 laser pulses.

6. Controller according to one of the preceding Claims, wherein the controller is designed so that a cut area of 1 mm^2 to 10 mm^2 is produced.

7. Controller according to one of the preceding Claims, wherein the controller is designed so that two successive laser pulses are arranged at a distance from one another, such that the faults

produced by the laser pulses in the eye lens do not touch or overlap one another.

8. Controller according to one of the preceding Claims, wherein the controller is designed for controlling a laser in order to produce a multiplicity of cut surfaces in a predetermined arrangement to one another.

9. Controller according to one of the preceding Claims, wherein the controller is designed to control the laser so that one or a multiplicity of cut surfaces are produced, in order to increase the ability of an eye lens to accommodate to at least two diopters.

10. Surgical laser, wherein said laser is connected to a controller according to one of Claims 1 to 9.

11. Method for the treatment of an eye lens, wherein a cut surface is produced inside the eye lens using a multiplicity of laser pulses.

12. Method according to Claim 11, wherein the pulse energy of the laser pulse is limited to a range from 1 pJ to 1 µJ.

13. Method according to one of Claims 11 to 12, wherein bubbles are produced in the eye lens by the laser pulse, the bubbles having a diameter of at most 50 µm.

14. Method according to one of Claims 11 to 13, wherein the thickness of the cut surface is limited to at most 5 µm.

15. Method according to one of Claims 11 to 14, wherein the cut area is produced by at least 10,000 laser pulses.

16. Method according to one of Claims 11 to 15, wherein a cut area with a surface of 1 mm^2 to 10 mm^2 is produced.

17. Method according to one of Claims 11 to 16, wherein two successive laser pulses are produced at a distance from one another in such a way that the faults produced by the laser pulses in the eye lens do not touch or overlap one another.

18. Method according to one of Claims 11 to 17, where a multiplicity of cut surfaces are produced in a predetermined arrangement relative to one another.

19. Method according to one of Claims 11 to 18, wherein one or a multiplicity of cut surfaces are produced in order to increase the ability of accommodation of an eye lens to at least two diopters.